Southwest Region, Area 1 Integrated Roadside Vegetation Management Plan

2009

Washington State Department of Transportation
Maintenance and Operations Division

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Summary

This plan explains the Washington State Department of Transportation's (WSDOT) policy and practice for maintenance of roadside vegetation for Maintenance Area 1 within the agency's Southwest Region. This area manages vegetation within approximately 287 miles of state highway corridor in Clark and Cowlitz Counties. In addition to the Interstate 5 corridor between Castle Rock and the Oregon border and all of Interstate 205, the area maintains State Route (SR) 14 through the Columbia Gorge out to just past the Skamania County line, SR 4 in Cowlitz County, and all of State Routes 411, 432, 433, 500, 501, 502, 503, and 504(Mt. St. Helens Highway). A map of the area is included as **Figure 1** on the following page.

The primary objectives in maintenance of roadside vegetation within the area are in relation to safety of the highway users, preservation of the highway infrastructure, and control of legally designated noxious weeds where they occur on the right of way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside, and being a good neighbor to the many adjoining property owners. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM) and the foundation of the program.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation in the area. Included is detailed information on policies and locations for planned routine maintenance practices, reoccurring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and prescriptions for best management practices in dealing with roadside vegetation problems and opportunities. In effect, this plan supports WSDOT's compliance with state law (RCW 17.15) by implementing the principles of Integrated Pest Management for the management of roadside vegetation. It also supports WSDOT's long-range goals for the management of roadsides to:

- Create naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce maintenance cost and herbicide use over time

This plan is organized around the major categories of roadside vegetation maintenance work. The major categories include: Zone 1 (or pavement edge maintenance), Routine Mowing, Noxious Weed Control, Nuisance Weed Control, Tree and Brush Control, and Special Maintenance Areas.

The management of roadside vegetation is a dynamic process and it is intended that this plan be continuously adapted over time based on input from a variety of sources. An integral component of the process is a database for recording IVM treatments for specific vegetation controls and locations, and to record information on follow up evaluation on these treatments. Annual area meetings will be held to discuss what is learned each year and refine the plan over time.

WSDOT is also requesting that local public and private entities with an interest in weed control and roadside vegetation management provide input on the plan and cooperate in efforts where appropriate. Additional copies of the draft plan are available online: www.wsdot.wa.gov/maintenance/vegetation/mgmt_plans.htm, hard copies can also be provided upon request. Please contact Bob Kofstad or Ray Willard at the numbers listed below for questions or comments:

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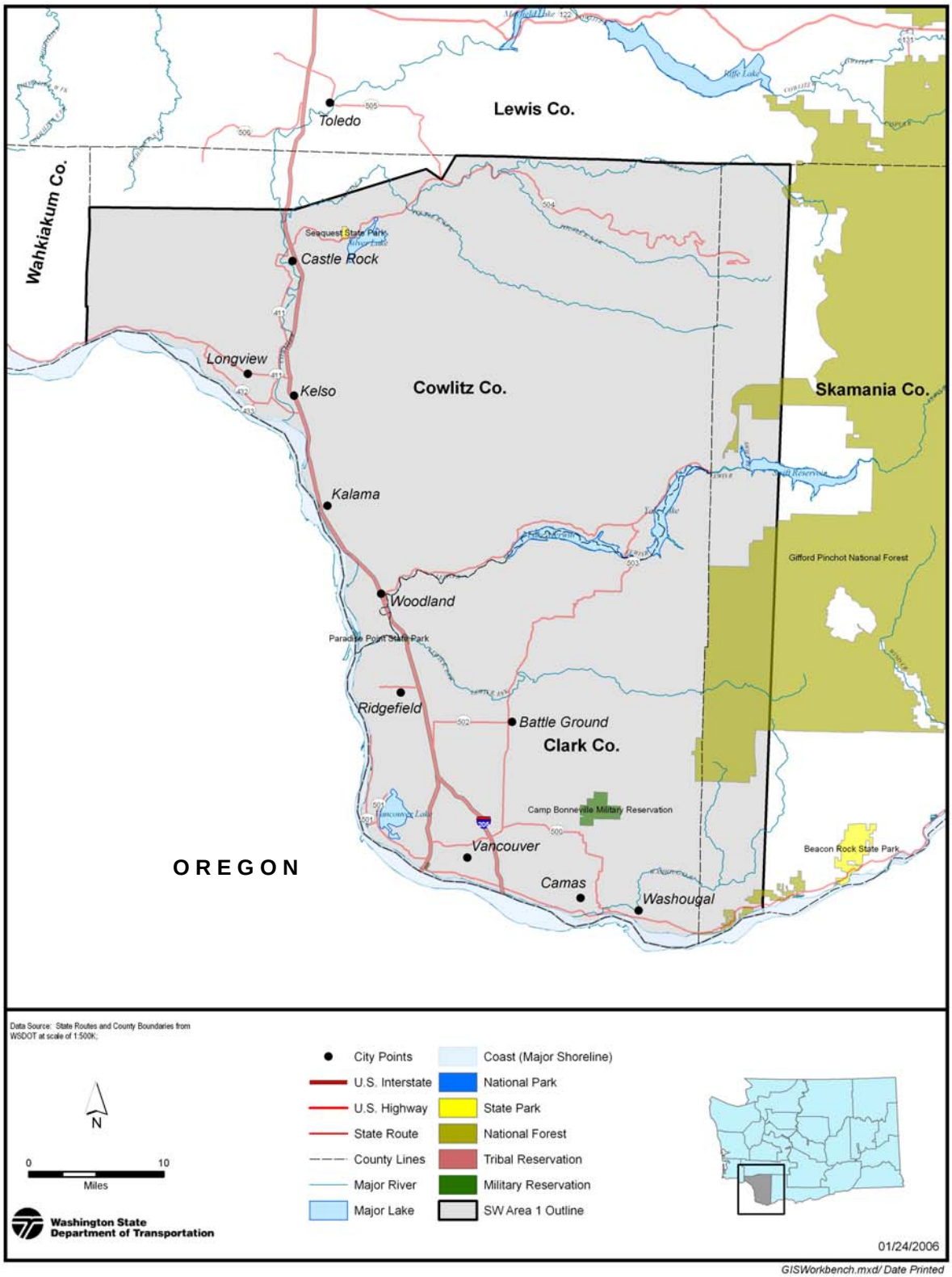


Southwest Region, Area 1 Map
Figure 1

Roadside Management Considerations

The primary objectives for maintenance of roadside vegetation are to provide for safe highway operation and to comply with legal regulations for control of noxious weeds and protection of the environment. Overall WSDOT maintenance policy and procedures for roadside vegetation are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002) www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf

Visual Quality
It is also important to maintain appropriate visual standards in the appearance of the roadside. All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread "brown-out" from herbicides or shattered limbs from side trimming. Roadsides should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996) www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf

Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all management zones occur along all state highways. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. Roadside vegetation management zones are illustrated in **Figure 2** below and defined as follows:

> **Zone 1** – A vegetation free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, and pavement and guardrail preservation needs. Zone 1 is typically maintained with an annual application of herbicides.
>
> **Zone 2** – The operational zone extends from the edge of Zone 1 or the pavement edge (if Zone 1 is not present) to a width necessary to provide for: safe errant vehicular recovery, sight distance at corners and intersections, and other operational, safety, and environmental functions. Zone 2 is typically maintained by mowing a single pass adjacent to the pavement and through selective removal of unwanted trees and brush beyond the mowing strip.
>
> **Zone 3** – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.

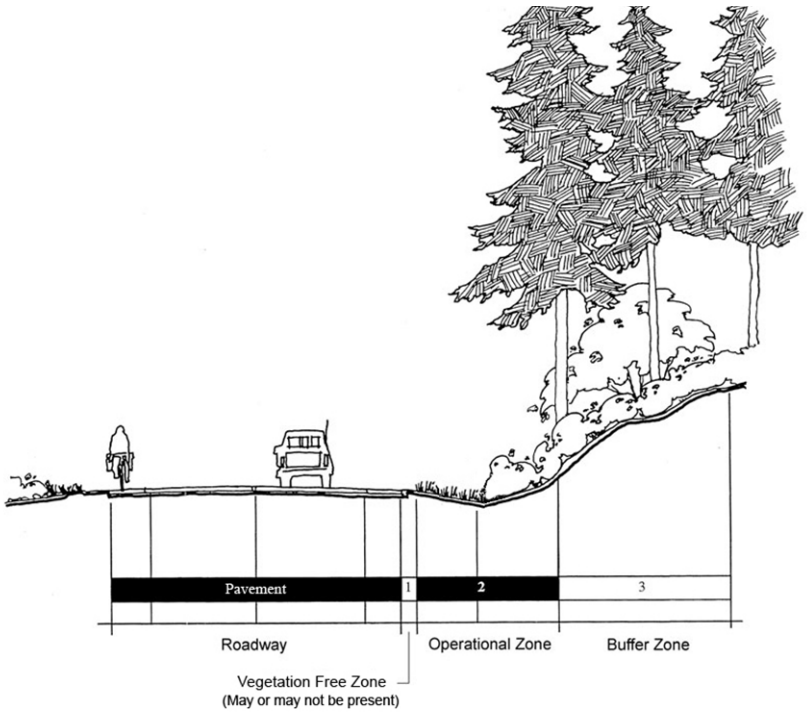
Roadside Maintenance Activities
All roadside maintenance activities are to be planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM). In every case it is essential that activities are conducted safely and that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness. However, in some cases maintenance activities are conducted more consistently on an annual basis, such as maintenance of Zone 1 where required, and routine mowing where specified.

> **Routine Maintenance Activities** – When vegetation maintenance activities are required to keep the area of roadside being treated in an annually controlled condition, they are considered routine. This is more critical for areas of vegetated roadside near the travel lanes, edge of pavement, and around guardrails. This plan provides prescriptions and gives locations for routine maintenance activities including maintenance of Zone 1 and annual mowing.

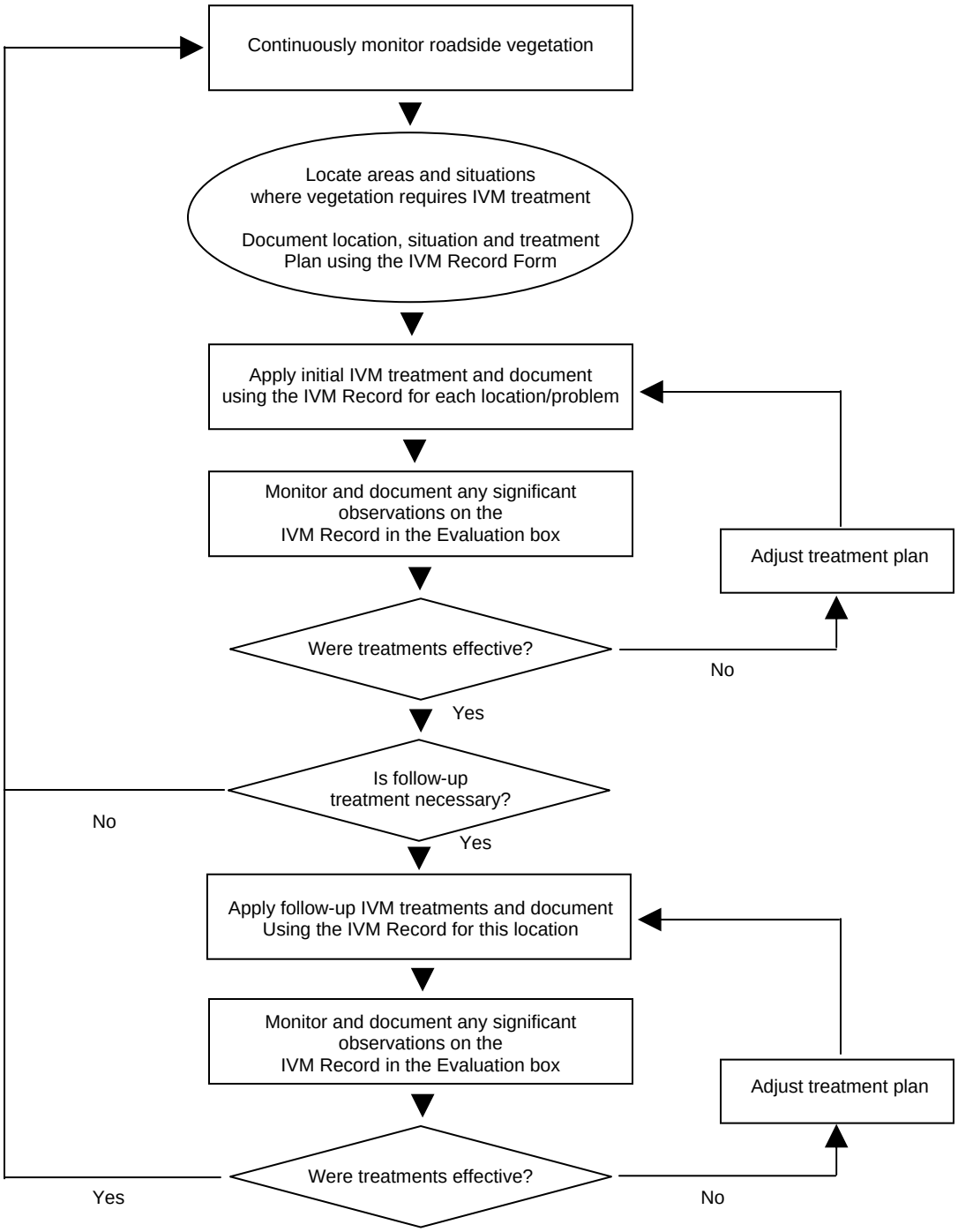
Integrated Vegetation Management Activities – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific type or types of unwanted plants. By carefully planning and carrying out these target specific activities it is possible over time to establish desirable vegetation, which will prevent the re-infestation of unwanted plants and reduce the need for maintenance over time. The process for determining and carrying out IVM actions is illustrated in **Figure 3** on the following page. This plan provides information, locations, and gives prescriptions for selective control of weeds and other unwanted vegetation and the promotion and establishment of desirable vegetation. Further information and guidance on the application of IVM is available in the document Integrated Vegetation Management for Roadsides (WSDOT, July 1997) www.wsdot.wa.gov/maintenance/pdf/IVM.pdf

Special Maintenance Areas – In some locations there are unique situations that require special consideration in determining appropriate vegetation maintenance actions. Examples of these are: environmentally sensitive areas, areas with special neighbor concerns, areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross tribal or federal lands. This plan provides information and guidance on the locations and unique requirements or restrictions on maintenance activities in all of these situations throughout the area.

Herbicide Use – WSDOT has conducted independent research on herbicide risk from toxicity and environmental fate, based specifically on agency application methods and use rates. Findings from this research have been used to establish an approved palette of herbicides and application limits for state highways. A complete summary of herbicides approved for use on WSDOT rights of way is included in **Appendix B**.



Typical Roadside Vegetation Management Zones
Figure 2



The IVM Decision-Making Process
Figure 3

Area IVM Goals

The purpose of this section is to identify the highest priority work activities for roadside vegetation management in Southwest Region, Area 1 in relation to Maintenance Accountability Process (MAP) activity groups and specified service level targets. In addition to the mowing and Zone 1 maintenance activities routinely accomplished on an annual basis in the area, these goals are intended to serve as a work plan for crews. Priorities are listed by specific activities and locations in relation to the three major MAP groups for roadside vegetation maintenance performance: Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control. This section of the plan is intended to supplement the information in the following section, ***Southwest Region, Area 1 – Roadside Vegetation Management Plan*** which details the guidelines and methods for accomplishing the work of roadside vegetation management.

Control of Vegetative Obstructions

Since the work of this group of maintenance activities relates to the safety and operation of the highway, these items are considered first priority in terms of the overall roadside maintenance priority. The primary activities for control of obstructions are annual mowing and trimming along the edges of all highway pavements, and applying herbicides to control vegetation around guardrail and maintain vegetation-free strips as designated in Appendix C. Beyond this, activities and locations of greatest need include:

- Numerous locations throughout the area will be addressed as needed to maintain and improve sight distance, prevent encroachment of brush on the highway and establishment of trees in Zone 2.

Noxious Weed Control

Noxious weeds are those species legally designated by state and county regulations for required control by all property owners. Because laws provide for fines and/or control work and billing of property owners by county administration, work under this group is considered second priority after critical safety related locations have been addressed. The majority of noxious weed control activities are conducted by crews patrolling the roadsides and treating visible weeds as they emerge each year, or in response to County weed board notices. In addition to this work, actions and locations designated as focus areas for eradication over the next several years due to reoccurring infestations include:

- I-5 MP 3 to 4 and 6 to 8 – Tansy ragwort and Poison hemlock
- I-5 MP 18 – Tansy ragwort
- I-5 MP 20 to 26 – Poison hemlock
- I-5 MP 49.0 - Knotweed
- SR-503 MP 12.5 to 14 - Meadow knapweed, Tansy ragwort
- SR-433 Rainier Bridge – Poison hemlock
- SR-503 at MP 43.8, westbound – Knotweed
- SR-503 Spur at MP 33.4, northbound – Knotweed
- SR-504 MP 5 - Seaquest - Knapweed
- SR-504 MP .5 – Knotweed
- SR-504 at MP 4.5, both sides of the road – Knotweed
- SR-432 MP 8.5 to 9.5 – Poison hemlock
- SR-14 MP 12.0 to 12.5 - Knotweed
- SR-14 MP 17.0 - Knotweed

- SR-14 164th to 192nd - Butterflybush
- SR-205 Mill Plain interchange – Tansy ragwort
- SR-14 MP 0 to 1.5 – Poison hemlock
- SR-500 MP 0 TO 1.0 and 2.5 to 3.5 – Tansy ragwort

Nuisance Vegetation Control

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated, by state and county law. It also includes work such as mowing of grass and weeds in areas where a more neatly maintained appearance is desired such as in gateway interchanges or highways in urbanized areas. Because nuisance vegetation control is lower priority after safety related and legally mandated activities, the location and work actions listed below may be postponed depending on availability of resources.

- Address blackberry and scotch broom patches in the I-5 corridor with selective mowing and follow-up by treating re-growth with herbicides.

1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when regular periodic treatment is required to keep vegetative growth from interfering with highway operational and maintenance objectives. Typical routine maintenance activities are maintenance of Zone 1 and certain types of mowing and trimming.

1.1. Routine Shoulder Maintenance (Zone 1)

WSDOT is currently re-evaluating its policy for maintenance of Zone 1. Past policy and practice will be refined over the coming years in response to findings from study of long-term benefit/cost resulting from alternative treatments. For the 2009 growing season, vegetation at the edge of pavement will be managed as follows on roadsides in this maintenance area:

1.1.1. Guidelines

- Annual Zone 1 treatments are intended to remove all vegetation growth in a solid band adjacent to the pavement edge. Limited re-growth of grasses and other non-weed species in the year following each treatment is acceptable.
- Zone 1 is maintained with the annual application of herbicides under all guardrail installations and throughout most of the area.
- Zone 1 is not maintained on secondary roads in urban areas, vegetated median areas along I-5, or in the Mt. St. Helens National Volcanic Monument.
- Where maintained, Zone 1 is 3' band width or less.

1.1.2 Methods

- Zone 1 is maintained using an annual application of combined non-selective, post- and pre-emergent soil residual herbicides
- Applications typically occur beginning mid-May depending on weather patterns and plant growth.
- Pavement edges will be monitored for surface drainage problems resulting from sod build-up in areas where Zone 1 is not maintained and will be graded in select locations as necessary to allow for hydraulic flow of storm water off the roadway surface.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 1 Maintenance**

1.1.3 Locations

- Zone 1 maintenance areas and methods are located in **Appendix C, Zone 1 Map**

1.2. Routine Mowing/Trimming (Zone 2)

1.2.1. Guidelines

- Routine annual mowing of roadside grass stands occurs throughout the area in at least one pass, at least once per year immediately adjacent to the edge of pavement, to prevent vegetation from encroaching on traffic operations.
- On limited access highways, routine annual mowing areas are designated as either single pass or multiple pass.
- Detailed description of mowing practice along the major freeway corridors in the area is provided in **Appendix D, Routine Mowing Plan**.
- Additional annual mowing or trimming will be conducted throughout the growing season as needed for select locations on secondary highways to

preserve site distance at curves, intersections and any other highway entry points.

- In areas beyond the identified routine mowing limits, mowing is only used occasionally as part of planned IVM treatments for target specific weed and/or tree and brush control as described below in **Section 2**.
- Other areas that may be routinely mowed include grass areas in park and ride lots, narrow grass strips along highway infrastructures, and fence-lines adjacent to neighboring properties as deemed necessary by the Area Superintendent.

1.2.2. Methods

- Timing and mowing heights are set to encourage root development and health of the grass stands.
- Single pass mowing consists of one pass up to the maximum width of mowing equipment (25' max.) but may be as narrow as 6' depending on mowing equipment and the presence of existing visual lines such as ditches.
- In areas designated as multiple pass mowing roadsides are mowed out from edge of pavement to the right of way line, the edge of shrub or tree lines, or across the entire median widths.
- Interchange mowing patterns are described in **Appendix F, Special Maintenance Areas** and in **Appendix D, Routine Mowing Plan.**
- See **Appendix A, Routine Maintenance Prescriptions, Zone 2 Maintenance**

1.2.3. Locations

- **Appendix D, Routine Mowing Map** shows locations where routine annual mowing occurs as one pass and as multiple passes. **Appendix D, Routine Mowing Plan** describes mowing priorities, timing and limits on the major corridors: I-5, I-205, SR14 and SR500.

1.3. Hazard Tree Removal

1.3.1. Guidelines

- Hazard tree removal is considered a routine maintenance activity because maintenance is constantly on the look out for any trees that pose an imminent threat to the highway or traffic.
- Whenever hazard trees are identified they are routinely removed as soon as possible.
- Hazard trees may be dead, leaning, or structurally unsound. Best horticultural judgment will be used in evaluating trees that appear diseased or structurally unsound or are believed to pose a long-term threat to determine the best course of action.
- Another consideration in removal of trees is the contribution to shading in areas prone to frost and ice formation on the highway surface. When such areas are identified, the surrounding canopy may be thinned through selective removal of large trees on the right of way.

1.3.2. Methods

- Hazard trees are removed in such a manner to minimize damage and impact to the highway structure and to other healthy trees and under-story vegetation.

2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process diagrammed on Page 5 in **Figure 3**. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve long term roadside maintenance goals and objectives in an environmentally and economically sound manner. The goal in utilizing the IVM approach is the effective control of unwanted vegetation and the establishment of stable, low maintenance native or naturalized plant communities that are compatible with:

- Highway maintenance and safety objectives.
- Preservation of environmental quality.
- Weed control requirements.
- The concern's of WSDOT's customers and neighbors.

Long term, the use of the IVM approach can reduce the intensity and cost of maintenance, as well as minimizing the need to use herbicides.

2.1. Integrated Vegetation Management Planning and Tracking Database

2.1.1. Guidelines

- An Integrated Vegetation Management Records database is available for use. This database is accessed through the same WSDOT network application as the Pesticide Application Records database.
- Any activities focused on treatment of a specific location and species infestation, or focused on treatment of any types of unwanted vegetation throughout the area will be documented with an initial IVM record outlining the long-term treatment plan. These same records will be updated over time whenever planned treatments are carried out, or when observations are made as to the success or failure of past treatments.
- Treatment records may be printed out and inserted into **Appendix G** of plan binders for reference.

2.2. Noxious Weed Control

2.2.1. Guidelines

- Noxious weed control is a high priority for WSDOT because of state law requiring control of designated species. Transportation rights of way are high priority locations for control of noxious weed species within the state because they cross and link so many adjacent properties and land uses.
- Whenever possible treatment of designated noxious weed species and infestations locations will be documented and treated following plans as defined by IVM record forms in the database.
- Washington State Law classifies noxious weeds in three classes: A, B, and C. All Class A species are required control wherever they occur statewide. The law allows for individual county weed boards to designate individual Class B and C weeds for control within the counties depending on how widespread and potentially harmful they are at the local level.
- For the purposes of this plan, noxious weeds are defined as species within any class designated or prioritized by the weed boards for control on state highway rights of way within the counties.

- At this time the Clark County Weed Board is more active than the Cowlitz County Board and the weed list for Clark County will be applied to all of SW Region, Area 1 in Cowlitz County.
- For SW Region, Area 1 the following weeds designated for control are known to exist on state highway rights of way in Cowlitz and Clark Counties:

Class A
Class A noxious weeds are non-native species with a limited distribution in the state. No Class A weeds are known to exist on WSDOT rights of way in this area.

Class B
Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. The following designated Class B species are known to exist on WSDOT right of way in SW Region, Area 1:

Common Name/Botanical Name	***Cowlitz***	***Clark***
Knotweed sp./*Polygonum sp*.	◆	
Dalmation toadflax/*Linaria dalmatica ssp. Dalmatica*	◆	
Ragwort tansy/*Senecio jacobaea*	◆	
Knapweed sp./*Centaurea sp.*	◆	◆
Poison hemlock/*Conium maculatum*	◆	◆
Puncturevine/*Tribulus terrestris*	◆	◆
Butterfly bush/ buddleia davidii	◆	

Class C
Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. The County Noxious Weed Control Boards also have the power to designate Class C species for control. The following designated Class C noxious weeds are known to exist on state right of way in SW Region, Area 1:

Common Name/Botanical Name
Canada thistle/*Cirsium arvense*
Bull thistle/*Cirsium vulgare*

- Pictures of designated control noxious weeds are included for reference in **Appendix E**.

2.2.2. Methods

- Because noxious weed species are often difficult to control, herbicides treatments are often the primary, initial means of control.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
- In conjunction with weed control treatments, a variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. The IVM Record

and database are essential to tracking the execution and success of these control measures.
- For recommended treatments specific to noxious weed species, see **Appendix A, IVM Prescriptions, Noxious Weed Control**

2.2.3. Locations

- **Appendix E, Noxious Weed Location Map** shows locations where the most critical reoccurring infestations of noxious species exist in SW Region, Area 1. There are a number of noxious weed locations not currently mapped, the list of locations will be added to and updated annually.

2.3. Nuisance Weed Control

2.3.1. Guidelines

- For the purposes of this plan, nuisance weed species are defined as species listed as Class B and C weeds on the state noxious weed lists, but not required for control within individual counties.
- Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, and enhances visual quality.
- Nuisance weed species will be controlled when time and budget allows.
- Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right of way or to un-infested neighboring properties.
- Species designated as nuisance weeds in SW Region, Area 1 that are known to exist on the highway right of way include:

Common Name/Botanical Name
Butterfly bush/*Buddleja davidii*
St. Johnswort/*Hypericum perforatum*
Common tansy/*Tanacetum vulgare*
Scotch broom/*Cytisus scoparius*
Common mullein/*Verbascum thapsus*
Himalayan blackberry/*Rubus discolor*

- Pictures of nuisance weeds are included for reference in **Appendix E**.

2.3.2. Methods

- Control measures for nuisance weed are dependent on the type of plant.
- Woody species such as Scotch broom and Himalayan blackberry are most effectively treated with a combination of cutting, herbicide treatments and encouragement of native vegetation.
- Perennial species such as Canada thistle are most effective controlled by succeeding years of properly timed herbicide applications.
- Annual or biennial species such as bull thistle and common tansy may also be effectively controlled with herbicide applications when plants are in the rosette stage in spring, or by hand pulling prior to seed set.

- See **Appendix A, IVM Prescriptions, Nuisance Weed Control**.

2.3.3. Locations

- Locations for nuisance weed control activities will be identified in the **Area IVM Goals** section of the plan beginning on Page 8.

2.4. Tree and Brush Control

2.4.1. Guidelines

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.
- Native shrub and small tree species should be allowed to grow and mature in Zone 2 and selectively trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Large tree species left to grow in Zone 2 and in some cases parts of Zone 3, can reach substantial size over a relatively short period of time and causing a hazard either to errant vehicle recovery, contributing to shading and winter ice formation.
- Fast-growing pioneer species such as big leaf maple, alder, or cottonwood, present a risk from falling on the road when mature. Wherever these trees emerge within 70' of the pavement on highway right of way, they should be removed within the first two to three years of growth or as soon as possible.
- Any tree with a trunk diameter of 4" or greater is considered a hazard for errant vehicles in Zone 2 and should be removed when young. The Design Clear Zone and is typically maintained to a width of 30' from the traffic lane edge where guardrail or concrete barrier does not exist. Actual minimum widths are determined by roadway alignment, traffic speed and volume, and cross-section of the roadside. Clear Zone widths are specified in the WSDOT Design Manual, Chapter 700.04. *www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/DesignManual.pdf*

2.4.2. Methods

- Removal of undesirable tree and brush species is typically accomplished by properly timed selective mowing, properly timed herbicide applications, hand cutting, hand pulling, or combinations thereof.
- In some locations it is most effective to mow back the majority of the existing vegetation and then selectively treat undesirable re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up around and form a competitive cover.
- In some cases when tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the roadside in the form of mulch for soil enhancement and weed prevention.
- Timing of activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of undesirable plants may be used to reduce or eliminate grow back.
- Chemical control methods will not be used on conifers greater than 2 feet in height and/or large dense patches of seedling trees, to avoid unnecessary negative visual impacts from "brown-out".

- Chemical control methods will not be used on deciduous trees and shrubs until after the first of September, except for as stump treatments in conjunction with mechanical cutting to eliminate grow-back.
- When possible, safe and practical, seedling of desirable trees may be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be signed to allow private citizens to collect seedlings for use as transplants.
- See **Appendix A, IVM Prescriptions, Tree and Brush Control**.

3. SPECIAL MAINTENANCE AREAS

Special Maintenance Areas are any locations with unique maintenance requirements or special considerations for roadside management. These areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state park land, wellheads, environmentally sensitive areas, school zones and roadsides adjacent to individual properties with current or annual no-spray agreements.

3.1. Interchanges/Intersections

3.1.1. Guidelines

- Interchange areas are sometimes developed to a greater level than general roadside areas to include storm water management facilities, pedestrian areas, and permanent vegetation designed for screening, and visual enhancements for community entrances.

3.1.2. Locations

- Maintenance considerations for all interchanges and key intersections are listed in **Appendix F**, along with notes describing practices for each location.

3.2. Formally Landscaped Sections

3.2.1. Guidelines

- On areas along I-5, I-205 and some sections of SR14 and 500 in or near Vancouver, the roadsides have been planted with ornamental landscaping and require a higher level of maintenance than the more natural roadsides in outlying areas.

3.2.2. Methods

- These areas are typically intended to grow and develop with only the plants as initially designed and constructed. Therefore a higher level of maintenance is required to remove and prevent any and all non-planted vegetation from the areas.
- Additional trimming and pruning may be required to maintain a neat and well kept appearance.
- Lawn areas, if present may include irrigation systems and weekly mowing routines during the growing season.

3.2.3. Locations

- Areas considered as formally landscaped are listed by route and begin and end milepost in **Appendix F**, along with notes describing practices for each location.

3.3. Bicycle/Pedestrian Paths

3.3.1. Guidelines

- In some cases agreements were made in the project development and design process, requiring WSDOT to maintain pathways and sidewalks.
- Paths and sidewalks may require special attention from maintenance to ensure the safety of users and to enhance the appearance of the local community.

3.3.2. Locations

- Locations where sidewalks or bicycle paths are maintained by WSDOT are referenced by the adjacent route and begin and end milepost in **Appendix F**.

3.4. City Maintenance Areas

3.4.1. Guidelines

- In most cases where non-limited access highways exist within city limits, the roadside (all area outside the highway pavement and drainage systems) are maintained by the local city government.

3.4.2. Locations

- Areas where roadsides are maintained by cities are listed by route and begin and end milepost in **Appendix F**.

3.5. Herbicide Sensitive Areas

3.5.1. Guidelines

- In some situations herbicide use is limited or restricted because of legal requirements, neighbor concerns, or WSDOT imposed environmental safety precautions.
- In these locations, vegetation must be managed without the use of herbicides or with only a limited palette of herbicide types.
- In some locations, individuals have registered with Washington State Department of Agriculture as being pesticide sensitive. If these individual reside within ½ mile of the highway, the law requires that WSDOT notify them prior to application of herbicides.

3.5.2. Locations

- SW Region, Area 1 currently does not have any locations that require special considerations for herbicide use.
- The list of pesticide sensitive individuals changes annually, supervisors and herbicide applicators should reference the most current list to see if any notifications are required prior to spraying in any location.

3.6. Adopt-a-Highway and Neighbor Maintained Agreements

3.6.1. Guidelines

- In some locations WSDOT has signed agreements with private citizens or neighboring businesses for maintenance of roadside vegetation.

3.6.2. Locations

- Areas with existing agreements for others to maintain a portion of the roadside are listed in **Appendix F**, along with notes describing arrangements for each location.

3.7. Storm Water Management Facilities

3.7.1. Guidelines

- Storm water management facilities include bio-filtration swales, retention ponds and infiltration ponds.

- Storm water management facilities are managed for noxious and nuisance weeds, and hazard trees following the same guidelines mentioned in previous sections. The primary objectives with regards to vegetation management within these facilities are maintenance of the functionality in terms of the designed volume of retention and water flow, and the maintenance of the surrounding fence
- Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed.
- Inlets and outfalls should be kept clear of vegetation and debris.

3.7.2. Locations

- Stormwater management facilities are listed by route and milepost in **Appendix F**.

3.8. Wetland Mitigation Sites

3.8.1. Guidelines

- Wetland mitigation sites are carefully monitored through WSDOT's Environmental Services Office for up to 10 years following their creation to ensure compliance with environmental regulation.
- In most cases vegetation in these sites is planted and established through the construction and long-term monitoring process so that once they are turned over to maintenance, actions are not required unless noxious weeds or hazardous trees become an issue.
- In cases where mitigation sites have fulfilled their original permit requirements and have been turned back to maintenance, sites should be inspected on an annual basis to determine if any repairs or weed control is necessary.

3.8.2. Locations

- All wetland mitigation sites within SW Region, Area 1 are listed by the nearest route and milepost, and the year scheduled for turnover to maintenance, in **Appendix F**.

3.9. IVM Treatment Sites

3.9.1. Guidelines

- As discussed in **Section 2.1**, selected sites are designated for planning, carrying out and monitoring multi-year IVM treatments for control of weeds or other unwanted vegetation.
- IVM treatment sites are documented with an initial record in the IVM Treatment Database, to identify the problem to be addressed, location(s), management goals, and integrated treatment plan.
- Records are updated each time a treatment is made, results observed, or when the treatment plan is modified based on observations.

3.9.2. Locations

- All designated IVM treatment sites within SW Region, Area 1 are listed by the route and milepost in **Appendix F**. This list is updated annually as new sites may be added and successfully treated sites removed.

Zone 1 Maintenance - Bareground Treatment

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Gravel shoulder	Gravel shoulder	Gravel shoulder	Gravel shoulder
MANAGEMENT GOALS:	Vegetation free	Vegetation free	Vegetation free	Vegetation free
METHOD:	Annual herbicide application	Annual herbicide application	Annual herbicide application	Annual herbicide application
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles
MATERIALS:	Payload 8 oz./acre + Oust 3 oz./acre	Milestone VM 7 oz./acre + Round Up Pro 64 oz./acre	Round Up Pro 64-128 oz./acre	Landmark 4.5-7 oz./acre + Razor Pro 64 oz./acre
TIMING:	Early Spring or Fall	Early Spring	Early to mid June	Early Spring
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 1 Maintenance - Bareground Treatment

	OPTION 5			
TREATMENT TYPE:	Around senstive locations			
MANAGEMENT GOALS:	Vegetation free			
METHOD:	Annual herbicide application			
EQUIPMENT:	Spray truck w/ banned width nozzles			
MATERIALS:	Aquanet at 64 oz./acre + LI700 at 32 to 64 oz./100 gal.			
TIMING:	Early Spring or Fall			
IVM FOLLOW-UP:	Evaluate control			
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 2 Maintenance - Tree and Brush

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Confir control	Deciduous tree and brush	Deciduous tree and brush	Deciduous tree and brush
MANAGEMENT GOALS:	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction
METHOD:	Herbicide treatment	Herbicide treatment	Herbicide treatment	Stump Treatment
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Dobber or Spray bottle
MATERIALS:	Garlon 3A 128 oz. and Escort 1 oz.	Milestone VM 5-7 oz. plus Garlon 3A 64 oz.	Krenite S	Garlon 3A 50/50 with water or forestry oil. Garlon 4 50/50 with water or forestry oil.
TIMING:	Late summer, early fall	Late summer, early fall	Late summer before leaf turn	Anytime
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Avoid brown out by spraying late in the season and spray only to appropriate height.			

Noxious Weed Control - Japanese Knotweed

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Stem injection		
ACTION THRESHOLD:	Whever present (dependent on available resources)	Smaller infestations and or near water		
MANAGEMENT GOALS:	Eradication and control only if your county requires.	Eradication and control only if your county requires.		
METHOD:	Spot treatment w/ heribicde	Stem injection w/ herbicide		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Injection equipment		
MATERIALS:	Habitat/MSO 0.5-1 lbs. per acre	Concentrated Roundup at 2%		
TIMING:	Early to late bloom between July and August	Once seasonal growth has occurred		
IVM FOLLOW-UP:	Reapply if necessary following year. Restore site w/ native vegetation.	Re-treat green stems as necessary. Restore site w/ native vegetation		
REMARKS:				

Noxious Weed Control - Tansy Ragwort

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Manual	Bio-Control
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
MANAGEMENT GOALS:	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.
METHOD:	Spot treatment w/herbicide	Spot treatment w/herbicide	Hand removal. May include cut stem.	
EQUIPMENT:	Tank spayer where possible, backpack spayer where necessary.	Tank spayer where possible, backpack spayer where necessary.		
MATERIALS:	Escort 1/2 to 1 oz./acre	Milestone VM 5 to 7 oz./acre	None required. Round -up in spray bottle for cut stem.	Flea beetle/Cinebar Moth
TIMING:	Spray by May	Spray by June	Pull by June	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize to reduce weed competition.	Reapply as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Noxious Weed Control - Knapweed sp.

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Manual	
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.		
MANAGEMENT GOALS:	Eradication and control if required by your county.	Eradication and control if required by your county.	Eradication and control if required by your county.	
METHOD:	Spot treatment w/ herbicide	Spot treatment w/ herbicide is most affective.	Hand removal. Roots must also be removed. Remove plant from site.	
EQUIPMENT:	Tank sprayer where possible, backpack sprayer where necessary	Tank sprayer where possible, backpack sprayer where necessary.	Labor, transporation	
MATERIALS:	Milestone 5 to 7 oz./acre	Transline .66 to 1.33 pints/acre	none required	
TIMING:	Early budding stages	Early budding stages	Early budding stages	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize to reduce weed competition.	Reapply as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Noxious Weed Control - Canada Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	Wherever present
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 5-7 oz./acre	Telar XP 1-3 oz./acre	Rhinocyllus Conicus
TIMING:	Apply from rosette to bud stage to actively growing thistle	Pre bud stage	Apply to the bud at bloom stage	Early growing season
IVM FOLLOW-UP:	Repeat annually as necessary	Apply before first frost	Apply before first frost	Redeploy as needed
REMARKS:	For most effective control, apply as a broadcast treatment to the entire infested area.			

Noxious Weed Control - Bull Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 3 to 5 oz. per acre	Telar XP 1-3 oz./acre	Urophora Stylata
TIMING:	Apply from rosette to bud stage to actively growing thistle	Apply to young actively growing weeds.	Apply to young actively growing weeds.	Early growing stage
IVM FOLLOW-UP:	Repeat annually as necessary	Repeat annually as necessary	Repeat annually as necessary	Reapply as necessary
REMARKS:				

Noxious Weed Control - Poison Hemlock

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Hand removal	Chemical application	Chemical application
ACTION THRESHOLD:	When plants appear	When plants appear	When plants appear	When plants appear
MANAGEMENT GOALS:	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.
METHOD:	Spot treatment w/ herbicide	Hand removal. Remove plant from site	Spot treatment w/ herbicide	Spot treatment w/ herbicide
EQUIPMENT:	Backpack sprayer, pickup etc.	Labor, transporation	Backpack sprayer, pickup etc.	Backpack sprayer, pickup etc.
MATERIALS:	Telar 1 to 3 oz.	None required	Excort 1 to 2 oz./Phase	1 -2 percent per acre Glyphosate
TIMING:	Spray by April	Pull by Arpil	Apply to actively growing plan	Treat at bud to full bloom stage of growth
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	Repply as necessary	Reapply as necessary
REMARKS:	Use a nonionic surfactant or silicone surfactant			

Nuisance Weed Control - Butterfly Bush

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	
ACTION THRESHOLD:	Whever present	Whever present	Whever present	
MANAGEMENT GOALS:	Eradication	Eradication	Eradication	
METHOD:	Cut Stump	Broadcast spray	Broadcast spray	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Power Spray	Power Spray	
MATERIALS:	Garlon 4 50/50 with MSO	Garlon 3A 64 oz./acre	Crossbow 64 oz./acre	
TIMING:	Late season	Early season to Mid season	Early season to Mid season	
IVM FOLLOW-UP:	Re-cut/treat as necessary.	Reapply if needed	Reapply if needed	
REMARKS:				

Nuisance Weed Control - St. Johnswort

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	When resources are available.	When resources are available.		
MANAGEMENT GOALS:	Minimize populations and prevent further spread of nuisance weeds.	Minimize populations and prevent further spread of nuisance weeds.		
METHOD:	Foliar treatment, mechanical.	Foliar treatment, mechanical.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.		
MATERIALS:	Milestone VM 5 to 7 oz./acres	1-2 oz./acre Escort plus Phase		
TIMING:	Apply after weeds emerge	Apply after weeds emerge		
IVM FOLLOW-UP:	Reapply as necessary	Reapply as necessary		
REMARKS:	Repeat application as needed			

Nuisance Weed Control - Common Tansy

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Whever present	Whever present	Whever present	
ACTION THRESHOLD:	Whever present	Whever present	Whever present	
MANAGEMENT GOALS:	Eradication	Eradiction	Eradiction	
METHOD:	Foliar treatment. Cut stem treatment.	Foliar treatment	Foliar treatment	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Telar 1 to 3 oz./acre	Escort 1 to 2 oz./acre	Milestone VM 3 to 5 oz./acre	
TIMING:	Anytime	Apply to actively growing vegetation in the Spring	Apply to actively growing vegetation in the Spring	
IVM FOLLOW-UP:	Re-cut/treat as necessary.	Retreat as necessary	Retreat as necessary	
REMARKS:				

Nuisance Weed Control - Scotch broom

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Manual application	Mechanical application	Bio-Control
ACTION THRESHOLD:	Whever new infestations occur (dependant on available resources)	Wherever present (dependant on available resources)	When resources are available.	When ever present
MANAGEMENT GOALS:	Minimize populations and prevent further spread of weed.	Minimize populations and prevent further spread of weeds.	Minimize populations and prevent further spread of nuisance weeds.	Minimize spread
METHOD:	Foliar treatment w/herbicide.	Hand pull	Mechanical control with follow-up cut stump treatment.	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Weed wrench option, brown brush monitor	Mower, backpack sprayer where necessary.	Truck
MATERIALS:	Garlon 3A at 2 quartz with Escort 2 oz. with Phase per acre	Garlon 4 mix 2 to 1 with crop oil	Garlon 3A at 1 to 1 with water or surfactant	Exapionfuscirostre
TIMING:	Apply during actively growing season	Anytime	After mowing	release when actively growing.
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.	Evaluate, redeploy if necessary
REMARKS:				

Nuisance Weed Control - Common Mullein

	OPTION 1			
TREATMENT TYPE:	Chemical application			
ACTION THRESHOLD:	Whe resources are available.			
MANAGEMENT GOALS:	Minimize population and prevent further spread of nuisance weeds.			
METHOD:	Foliar treatment, mechanical			
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary, mower.			
MATERIALS:	7oz./acre Milestone VM			
TIMING:	Spring			
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize or plant to restore native plant community.			
REMARKS:				

Nuisance Weed Control - Himalayan Blackberry

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Mechanical application		
ACTION THRESHOLD:	Whever present (dependant on resources)	When resources are available.		
MANAGEMENT GOALS:	Control and eradicate if county requires.	Minimize populations and prevent further spead of weed.		
METHOD:	Foliar treatment w/ herbicide	Mechanical control with follow-up cut stump treatment.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary.	Mower or hand labor, backpack spayer or spray bottle where necessary.		
MATERIALS:	Krenite 1.5-6 gallons/acre	Crossbow 1.25-1.5 gallons/acre		
TIMING:	In the Fall, after berries drop.	After mowing, in the fall.		
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community	Re-cut/treat as necessary. Seed and fertilize or plant to restore native community.		
REMARKS:				

Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:
1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	***Product Name(s)***	***Where Used***	***How/Why Used***	***Notes/Recommendations***	***Restrictions***	***Cautions***
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Bromacil	Krovar 1 DF Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Krovar and Hyvar are premixed with diuron	Westside - Restricted for use Eastside - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on Canadian thistle and horsetail. Landmark is premixed with Oust.	None	None
Clopyralid	Transline Curtail Pathfinder	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr	Curtail and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dicamba	Vanquish Veteran 720	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Vanquish is the dicamba formulation without 2,4-D	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Highly effective for pre-emergent control of unwanted weeds in ornamentals	Restricted for use within 60' of all water	Dichlobenil is highly toxic to aquatic insects
Diflufenzopyr	Overdrive	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Diuron 4 L Diuron 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Cost effective weed control for Zone 1 in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish.
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Second year of use in zone 1, still evaluating	Restricted for use within 60' of all salt water	Highly toxic to estuarine invertebrates
Fluroxypyr	Vista	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	Highly toxic to Eastern Oyster, high surface runoff potential
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	Effective broadleaf tree control without visual impacts	None	None
Glyphosate	Roundup Pro Razor Pro Buccaneer Aquaneat Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective control of all vegetation	Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.	None	None
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases	None	High surface runoff potential, potentially mobile in soil if rain is possible.
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Ronstar	Restricted for use within 60' of all water	High surface runoff potential
Metsulfuron-methyl	Escort XP Metsulfuron Methyl 60 DF	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	Good Zone 1 product but may be difficult to keep in suspension	Restricted for use within 60' of all water	High surface runoff potential
Oryzalin	Oryzalin A.S. Surflan A.S	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Product requires additional rinsing to thoroughly remove residues from empty container	Restricted for use within 60' of all water	Highly toxic to fish
Oxadiazon	Ronstar G Ronstar WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Gallery	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Highly toxic to fish
Pendimethalin	Pendulum 2G Pendulum Aqua	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish, high potential for loss on eroded soil
Picloram	Tordon	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Highly effective for conifer and broadleaf weed control in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly mobile in soil and readily adsorbed through roots of desirable trees
Pyraflufen	Edict	Noxious and nuisance weed control, Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Effective with Roundup for Kochia control	Restricted for use within 60' of all water	Irreversible eye damage, highly toxic to Rainbow Trout
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	New product available for use in 2006	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Zone 1	Nonselective pre/post emergent grass and weed control	Landmark is premixed with Telar	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Triclopyr Amine	Garlon 3A	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	None	None	Irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for invert applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish

Appendix C:

Southwest Region Area 1
Zone 1 Maintenance
Map 1 of 1

Zone 1
State Route
25 Mile Post
County Boundaries
City Limits
State Park
National Forest
Southwest Region Area 1
Major Lakes
Coast

0 6
Miles

N

Washington State Department of Transportation

2009

This plan supplements the mapped inventory in describing the limits of routine mowing for highways within Maintenance Area 1 in the Southwest Region. Areas that are routinely mowed are areas without other desirable shrubs and/or trees, and are intended to be maintained as permanent grass stands. Any mowing beyond annually mowed areas will only occur occasionally on an as needed basis, when planned as part of Integrated Vegetation Management (IVM) treatments for control of weeds and other undesirable brush and trees.

General Guidelines for Annual Mowing Areas

1) Annual routine mowing typically will begin in May starting with urban areas and gateway interchanges then proceed to single pass and/or selective sight distance related mowing as needed on all other routes.
2) Turf/lawn areas in formally landscaped section of I-5 within the Vancouver city limits and the interchange in Woodland will be mowed weekly or as needed throughout the growing season to maintain a neatly mowed appearance throughout the year.
3) Designated urban areas and gateway interchanges will receive first priority mowing. These areas will typically be mowed one pass around the edges in the spring and then mowed out entirely as early as possible during the summer beginning once the grasses have set seed, which is typically around the mid-June. The goal in these areas is to maintain a roughly mowed appearance throughout the year. Mowing height in these areas should be set at a minimum of 4 inches.
4) All other outlying routine mowing areas will be mowed once a year in the widths described below and on the routine mowing map in this appendix. Mowing in these areas will begin once grass has matured and set seed and proceed throughout the summer. The goal in these areas is to improve highway delineation and prevent vegetation encroachment on traffic operations. Mowing height in these areas should be set as high as possible for effective mowing results but no lower than 6 inches.
5) Avoid mowing steep slopes or wet areas with equipment that may result in tearing or rutting of the grass stand. Any areas where bare soil is exposed from mowing practices or traffic accidents should be re-seeded with grass the following fall.
6) Whenever possible, mowing should be timed to compliment noxious weed control efforts. In some cases mowing can be timed to suppress seed production in certain weed species, in other cases mowing may be timed later in the season to all effective treatment of weeds through herbicide application.
7) When mowing around or next to desirable masses of shrubs and/or trees, leave a 3 to 6 ft. buffer when appropriate to allow these plant populations to expand over time.

Formal Lawns

1) The following areas of ornamental turf will be mowed out completely on a weekly basis as needed throughout the growing season. These lawns are no longer irrigated and are intended to go dormant during the dry months of the summer, so weekly mowing will typically occur in the spring and early summer with some additional cycles in the fall if conditions promote additional green-up and growth.

I-5: All lawns between MP 0 and MP 3

Woodland Interchange – Exit 21

Vancouver Metro Area

1) Limited access interchanges and all shoulders in and around the Vancouver metro area will be mowed one pass along the edge of pavement when grass growth reaches an

average height of 12 inches in the spring, but no earlier than the first of March. Prior to July 4, these areas will be mowed a second time with interchanges mowed out completely and shoulders and medians mowed either single or multiple pass as shown on the routine mowing map in this appendix.

2) Areas mowed according to this cycle within the Vancouver Metro area identified as the "urban triangle" include:

I-5: MP 3 to MP 7.5

SR-205: MP 27.1 to MP 37

SR-14: MP 0 to MP 6.38

SR-500: MP 0 to MP 5.9

Gateway Interchanges

1) Outside the Vancouver Metro area, the following gateway interchanges will be mowed out completely through the course of each growing season, from edge of pavement to shrub/tree or fence lines, except where slopes are 2:1 or greater. These areas will typically be mowed a single pass around the perimeter in May/June and then be mowed out entirely during the summer, after grasses have gone to seed and prior to seed set on weed species. The goal in these interchanges is to maintain a roughly mowed or "meadow" appearance throughout the year.

I-5: Exit – 179th St.

Exit 14 – Ridgefield

Exit 16 – La Center

Exit 21 – N. Woodland

Exit 30 – Kalama

Exit 36, 36A, 36B – Longview "Y"/SR-432

Exit 39 – Kelso

Exit 40 – N. Kelso

Exit 42 – Lexington

Exit 49 – N. Castle Rock/SR-504

SR-432: 3rd Avenue Exit – MP 7.65

General Roadside Mowing Areas

1) Road shoulders in all other areas, both outside shoulders and median, and the remaining rural interchanges will be mowed one time per year. Areas are designated as single or multiple pass on the routine mowing map in this appendix. Width of mowing in areas designated as "single pass" will be determined by the width of mowing equipment but will be no wider than 25 ft. Areas designated as "multiple pass" will be mowed out to the existing fence line or tree line, or across the entire width of median. Outside shoulders adjacent to steep (2:1 or greater) cut slopes will only receive one mowing pass adjacent to pavement and generally to the bottom of the slope. Steep fill slopes behind guardrail will only be mowed if accessible, and otherwise treated as necessary using IVM prescriptions for control of unwanted vegetation. Mowing of these areas will be timed to begin once grasses have matured and set seed. The goal is to have all general roadside

mowing areas completed after grasses have gone to seed and before the majority of noxious and nuisance weeds have set seed typically prior to the end of July.

2) The following rural interchanges will be routinely mowed once per year, with one pass adjacent to edge of pavement, except where slopes are greater than 2:1. The width of mowing in these cases is determined by the equipment being used, but is no wider than 25 ft and generally only to the bottom of the ditch line where present. These areas will be mowed once grasses have matured and set seed. The goal in these interchanges is to maintain a roughly mowed edge strip and to allow desirable trees and shrubs develop in the interior areas while using IVM treatments to control undesirable trees and nuisance and noxious weeds.

I-5: Exit 22 – Dike Rd.

Exit 27 – Todd Rd.

Exit 32 – Kalama River Rd.

Exit 46 – Headquarters Rd.

Exit 48 – South Castle Rock

Exit 52 – Toutle Park Rd.

Lewis

Seaquest State Park

Castle Rock

Longview

Cowlitz

Mount Saint Helens National Volcanic Monument

Kelso

kalama

Skamania

Clark

Woodland

La Center

Paradise Point State Park

Yacolt

Gifford Pinchot National Forest

Ridgefield

Battle Ground Lake State Park

Battle Ground

Vancouver

Camas

Washougal

Reed Island State Park

Oregon

25 Mile Post	State Park
Multi Pass	National Forest
Single Pass	Southwest Region Area 1
State Route	Major Lakes
County Boundaries	Coast
City Limits	

0 5
Miles

N

Washington State Department of Transportation

Appendix D:

Southwest Region Area 1
Mowing Maintenance
Map 1 of 1

2009

Designated for control in SW area 1:
(Clark and Cowlitz County)

Knotweed sp./
Polygonum sp.

Tansy Ragwort/
Senecio jacobaea

Meadow Knapweed/
Centaurea jacea

Canada Thistle/
Cirsium arvense

Bull Thistle/
Cirsium vulgare

Poison Hemlock/
Conium maculatum

Designated for control in SW area 1:
(Clark and Cowlitz County)

Puncturevine/
Tribulus terrestris

Dalmation toadflax/
Liniara dalmatica ssp.

Nuisance weeds in SW area 1:
(Clark and Cowlitz County)

Butterfly Bush/
Buddleja davidii

St. Johnswort/
Hypericum perforatum

Common Tansy/
Tanacetum vulgare

Scotch Broom/
Cytisus scoparius

Mullein/
Verbascum thapsus

Himalayan Blackberry/
Rubus discolor

- Butterfly bush
- Knapweed
- Knotweed
- Poison Hemlock
- Tansy Ragwort
- State Route
- 25 Mile Post
- County Boundaries
- City Limits
- State Park
- National Forest
- Southwest Region Area 1
- Major Lakes
- Coast

0 5
Miles

N

Washington State Department of Transportation

Appendix E:

Southwest Region Area 1 Noxious Weed Location Map 1 of 1

2009

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
004	Both	RS	60.79	62.28	City of Kelso	Maintained by city
004	Both	RS	58.62	58.63	RR crossing	840536Y
004	Both	RS	57.70	60.79	City of Longview	Maintained by city
004	Both	RS	55.31	55.98	City of Longview	Maintained by city
005	Both	RS	0.00	2.37	Formal landscaped area	
005	INC	RS	0.28	1.44	Multiple Ramps	
005	INC	RS	1.92	2.51	Exit to 39th St.	
005	INC	RS	2.74	3.29	Exit 3 Hazel Dell	
005	INC	RS	2.86	2.87	Burnt Bridge Creek	I 5 Salmon Creek to I 205 (Burnt Bridge)
005	INC	RS	3.99	4.76	Exit 4 N.E 78th St.	
005	INC	RS	5.09	5.98	Exit 5 NE 99th St.	
005	INC	RS	7.01	7.78	Exit to 129th St.	
005	INC	RS	8.94	9.95	Exit 9 NE 179th St.	
005	INC	RS	11.01	11.88	Gee Creek Rest Area	Special Maintenance Area
005	INC	RS	13.97	14.55	Exit 14 Pioneer St.	
005	INC	RS	15.05	15.81	Weight Station	
005	INC	RS	16.56	17.23	Exit 16 La Center Rd.	
005	INC	RS	20.87	22.21	Exit 21 Woodland Cougar	
005	INC	RS	22.44	23.18	Exit 22 Dike Access Rd.	
005	INC	RS	27.41	28.24	Exit 27 Todd Road	
005	INC	RS	29.60	31.04	Exit 30 Kalama	
005	INC	RS	32.02	32.76	Exit 32 Kalama Rd.	
005	INC	RS	36.26	37.46	Exit 36 Longview/Long Beach	
005	INC	RS	39.60	40.27	Exit 39 kelso/Longview	
005	INC	RS	40.49	41.16	Exit 40 N. Kelso Ave	
005	INC	RS	42.37	43.13	Exit 42 Ostrander Rd.	
005	INC	RS	45.79	46.78	Exit 46 Headquarters Rd.	
005	INC	RS	47.70	48.59	Exit 48 Castle Rock	
005	INC	RS	49.55	50.43	Exit 49 Castle Rock/Toutle	
005	INC	RS	52.40	52.65	Exit 52 Barnes Dr.	
005	DEC	RS	52.65	52.21	Exit 52 Barnes Dr.	
005	DEC	RS	50.20	49.33	Exit 49 Castle Rock/Toutle	
005	DEC	RS	48.35	47.44	Exit 48 Huntington Ave.	
005	DEC	RS	46.46	45.60	Exit 46 Headquarters Rd.	
005	DEC	RS	44.39	43.63	Weight Station	
005	DEC	RS	42.96	42.14	Exit 42 Ostrander Rd.	
005	DEC	RS	40.94	40.36	Exit 40 Kelso/Longview	
005	DEC	RS	40.17	39.41	Exit 39 Kelso	
005	DEC	RS	37.44	36.34	Exit 36 Kelso/Longview Ind. Area	
005	DEC	RS	32.53	31.88	Exit 32 Kalama River Rd.	
005	DEC	RS	30.99	30.62	Exit 30 Kalama	
005	DEC	RS	29.81	29.40	On ramp	

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
005	DEC	RS	27.97	27.18	Exit 27 Todd Road	
005	DEC	RS	23.02	22.12	Exit 22 Dike Access Rd.	
005	DEC	RS	21.95	20.68	Exit 21 Woodland Cougar	
005	DEC	RS	17.07	16.39	Exit La Center Rd.	
005	DEC	RS	14.41	13.82	Exit 14 Ridgefield	
005	DEC	RS	13.22	12.62	Rest Area	Special Maintenance Area
005	DEC	RS	9.69	9.13	Exit 9 NE 179th St.	
005	DEC	RS	8.05	7.06	Ext 7 SR 205	
005	DEC	RS	5.77	5.54	Exit 5 NE 99th St.	
005	DEC	RS	5.34	5.10	On ramp	
005	DEC	RS	4.73	4.03	Exit 4 NE 78th St.	
005	DEC	RS	3.24	2.75	Exit 3 Main St.	
005	DEC	RS	2.44	1.96	Exit 2 39th St.	
005	DEC	RS	1.82	1.50	Exit 1D	
005	DEC	RS	1.37	0.85	Exit 1C	
005	DEC	RS	0.76	0.29	Exit 1A	
014	INC	RS	0.07	0.41	Multiple Ramped area	
014	INC	RS	0.63	1.61	Exit 1 Columbia Way	
014	INC	RS	2.17	2.45	On ramp	
014	INC	RS	3.01	3.36	Exit 3 Everygreen Blvd	
014	INC	RS	4.17	4.82	Exit 4 Lieser Rd.	
014	INC	RS	5.28	5.57	Exit 5 SE Ellsworth Rd.	
014	INC	RS	5.57	6.97	Exit 6 to SR 205	
014	INC	RS	7.95	9.10	Exit 8 SE 164th Ave	
014	INC	RS	9.79	10.48	Exit 10 Se 192nd Ave.	
014	INC	RS	12.04	12.52	Exit 12 Camas	
014	DEC	RS	12.48	11.94	Exit to Norwood St.	
014	DEC	RS	10.35	9.72	Exit 10 Se 192nd Ave.	
014	DEC	RS	8.89	7.92	Exit 8 SE 164th Ave.	
014	DEC	RS	7.00	5.08	Exit 6 NE Portland	
014	DEC	RS	4.51	3.95	Exit 4 Lieser Rd.	
014	DEC	RS	3.66	2.60	Exit 3 Everygreen Blvd.	
014	DEC	RS	1.91	0.54	Exit 1 Vnacouver Nat. Hist.	
014	DEC	RS	0.29	0.00	Exit to N. I-5	
014	Both	RS	12.85	14.79	City of Camas	Maintained by city
014	Both	RS	14.79	18.12	City of Washougal	Maintained by city
205	INC	RS	26.92	27.65	Exit 27 Vancouver/Camas	
205	INC	RS	27.81	28.94	Exit 28 Mille Plain Rd.	
205	INC	RS	30.07	31.51	Exit 30 A NE Gher Rd.	
205	INC	RS	32.65	33.53	Exit 32 Padden Parkway	
205	INC	RS	36.46	37.16	Exit 36 NE 134th St.	

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
205	DEC	RS	37.16	36.23	Off ramp	
205	DEC	RS	33.50	32.57	Exit 32 Padden Parkway	
205	DEC	RS	31.74	30.25	Exit 30 Vancouver	
205	DEC	RS	28.66	28.01	Exit 28 Mill Plain Rd.	
205	DEC	RS	27.69	26.99	Exit 27 Vancouver	
411	Both	RS	12.46	13.48	City of Castle Rock	Maintained by city
411	Both	RS	2.03	2.51	City of Longview	Maintained by city
411	Both	RS	1.49	2.03	City of Kelso	Maintained by city
411	Both	RS	0.00	1.49	City of Longview	Maintained by city
432	INC	RS	10.10	10.31	Off ramp to S. Portland	
432	INC	RS	9.91	10.01	Off ramp to Talley Way	
432	INC	RS	9.25	9.59	Off ramp to Dike Rd.	
432	INC	RS	7.71	8.19	On ramp from 3rd Ave.	
432	DEC	RS	10.27	10.10	Off ramp to I-5	
432	DEC	RS	10.00	9.88	Off ramp to Kelso Indust.	
432	DEC	RS	9.63	9.07	Off ramp to Dike Rd.	
432	DEC	RS	7.97	7.69	Off ramp to 3rd. Ave.	
432	Both	RS	8.54	8.55	RR crossing	101805A
432	Both	RS	8.54	8.55	RR crossing	101842C
432	Both	RS	7.19	7.20	RR crossing	101826T
432	Both	RS	6.15	6.16	RR crossing	101794P
432	Both	RS	6.09	7.62	City of Longview	Maintained by city
432	Both	RS	5.90	5.91	RR crossing	101806G
432	Both	RS	4.79	4.80	RR crossing	840534K
432	Both	RS	2.17	2.78	City of Longview	Maintained by city
433	Both	RS	0.87	0.94	City of Longview	Maintained by city
500	INC	RS	0.42	0.88	On ramp from 15th Ave.	
500	INC	RS	2.67	3.34	Off ramp to NE Anderson	
500	INC	RS	3.62	4.16	Off ramp to NE Thurston Way	
500	INC	RS	4.40	4.74	Off ramp to Salem	
500	INC	RS	4.82	5.41	Off ramp to NE 112th Ave.	
500	INC	RS	5.47	5.69	On ramp from 112th Ave.	
500	DEC	RS	5.78	5.24	Off ramp to NE 113th Ave.	
500	DEC	RS	5.09	4.79	Off ramp to SR 205	
500	DEC	RS	4.71	4.45	Off ramp to Salem	
500	DEC	RS	4.21	3.71	Off ramp to NE Thurston Way	
500	DEC	RS	3.50	2.61	Off ramp to NE Anderson Rd.	

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
500	DEC	RS	3.17	3.18	Wetland Mitigation Site	Andresen Road Interchange NE
500	DEC	RS	3.17	3.18	Wetland Mitigation Site	Andresen Road Interchange NW
500	DEC	RS	3.17	3.18	Wetland Mitigation Site	Andresen Road Interchange SE
500	DEC	RS	3.17	3.18	Wetland Mitigation Site	Andresen Road Interchange SW
500	DEC	RS	0.69	0.40	NE 15th Ave.	
500	Both	RS	16.84	20.37	City of Camas	Maintained by city
501	Both	RS	0.00	8.29	City of Vancouver	Maintained by city
501	Both	RS	1.37	1.38		Mystery x
501	Both	RS	16.91	19.88	City of Ridgefield	Maintained by city
502	Both	RS	6.53	7.56	City of Battle Ground	Maintained by city
503	INC	RS	5.13	5.14	Wetland Mitigation Site	NE 144th Street to Battle Ground (West)
503	Both	RS	4.48	4.49	RR Crossing	852342C
503	Both	RS	7.10	9.36	City of Battle Ground	Maintained by city
503	Both	RS	52.78	54.38	City of Woodland	Maintained by city
504	DEC	RS	20.9	20.89	Wetland Mitigation Site	Kid Valley Road to Maple Flats (Kid Valley)
504	DEC	RS	20.82	20.81	Wetland Mitigation Site	Kid Valley Road to Maple Flats (Toutle River)
504	Both	RS	44.39	51.78	Mt. St. Helen National Forest	
504	Both	RS	0.00	0.51	City of Castle Rock	Maintained by city

Washington State Department of Transportation

Integrated Vegetation Management Record

Org Code	County	Date		Vegetation Management Zone(s)
		6/13/2007		☐ Zone 1 ☐ Zone 2 ☐ Zone 3

Area
SR. _____ MP _____ to MP _____ Location

Check Appropriate Boxes: ☐ NB ☐ EB ☐ SB ☐ WB
☐ Roadside ☐ Shoulder ☐ Median
☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride
☐ Interchange ☐ Bridge ☐ Ramp
☐ Mitigation Site ☐ Stormwater ☐ Yard/Stockpile
Third Party Damage ☐ Yes
Sensitive Sites ☐ Aquatic ☐ Wetlands

Target ☐ Noxious Weeds ☐ Nuisance Weeds ☐ Brush/Trees ☐ Hazard Tree ☐ Other
List Target/Species: _____

Reason for Action:
☐ Noxious Weeds ☐ Nuisance Weeds ☐ Fire Prevention ☐ Restore Native Veg. ☐ Zone 1 Pilot ☐ Aesthetic
☐ Site Distance ☐ Hazard Vegetation ☐ Customer Request ☐ Enhance Vegetation ☐ Slope Stabilization ☐ Other _____

Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)

Approximate Acres to Accomplish

Activities		Planned date of Treatment	Actual date of Treatment
Manual	☐ Digging ☐ Pulling ☐ Planting ☐ Lopping ☐ Scalping ☐ Other _____		
Mechanical	☐ Axial Saw Work ☐ Manual Brush Cutting ☐ Tractor Brush Cutter ☐ Tractor Mower ☐ Mower/Chain ☐ Other		
Bio-Control	☐ Insects ☐ Parasites ☐ Pathogens Type/Species _____		
Cultural	☐ Burning ☐ Fertilizing ☐ Grading ☐ Grazing ☐ Seeding ☐ Soil Amendment ☐ Other _____		
Chemical	Record Number		

#1 Evaluation and Date

#2 Evaluation and Date

#3 Evaluation and Date

Washington State Department of Transportation

Pesticide Application

Org. Code	County	Date of Application	Start / Finish	ICP	Stores Issue Ticket Number(s)
		6/13/2007	○ AM ○ PM / ○ AM ○ PM		

Area
SR ☐ MP ☐ to MP ☐ and MP ☐ to MP ☐ and MP ☐ to MP ☐ and MP ☐ to MP ☐

Check Appropriate Boxes:
☐ NB ☐ EB ☐ SB ☐ WB
☐ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Yard/Stockpile
☐ Spot Spray ☐ Blanket Spray
☐ Aquatic ☐ Wetlands

☐ Weeds ☐ Noxious Weeds ☐ Disease ☐ Brush ☐ Insects ☐ Other
Zone 1 ○ yes ○ no
List Pest(s):

Start Weather Conditions
Temperature ☐ °F (°C) Wind (Direction From) ☐ Wind (Range) ☐ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Finish Weather Conditions
Temperature ☐ °F (°C) Wind (Direction From) ☐ Wind (Range) ☐ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product Per Acre (hectare)	Unit	Total Daily Usage	Unit

Total ☐ **Acres(hectares) Treated at** ☐ **gallons(liters) of spray per acre(hectare).**

Equipment Number	Tank Size 1	2	3	4	5	Calibration Date	Vehicle Speed mph(km/h)	Nozzle Pressure PSI(kPa)	Width of Spray Pattern Foot(meter)
	☐	☐	☐	☐	☐		☐	☐	☐

☐ Hand/spreader ☐ Backpack ☐ Hand gun ☐ Fixed Nozzle ☐ Boom ☐ Other (Specify) ☐
☐ Tank Mix (Conv.) ☐ Injection ☐ Invert

Operator Name	Operator Pesticide License No.	Operator Signature	Driver Name

Remarks

Buffer Area Driver's Name

Pesticide Sensitivity Registration Applies: ☐ Yes ☐ No

Contact

Division of Emergency Management (1-800-258-5990)

Additional Notes

DOT Form 540-506 EF Revised 1/2007

Distribution: O/C Maint. Operator Region File
Send OSC Copy Within 5 Days

Osl= Ounces Dry Lb= Pound
Osl= Ounces Liquid Ga= Gallon
Pt= Pint Qt= Quart

g= gram kg=kilogram
ml=Milliliter L= Liter

Entity	Mailing Address	Contact Person	Title	Phone	E-Mail
Clark County	11104 NE 149th St. Building C Suit 200 Brush Praire, WA 98606	Phillip Burgess	Weed Management Director	(360) 397-6140 Fax: (360) 397-6122	phil.burgess@co.clark.wa.us
Cowlitz County	207 4th Ave. North Kelso, Wa 98626	Kennneth C. Stone	Director of Public Works	(360) 577-3030	stonek@co.cowlitz.wa.us
Skamania County	171 N. Vancouver Ave Stevenson, WA 98648	Roger Lembrick	Noxious Weed Cooridnator	(509) 427-3940 Fax: (509) 427-4839	lembrick@co.skamania.wa.us
City of Vancouver	4500 Columbia Way Vancouver, WA 98661-5580	Brian Carlson	Director of Public Works	(360) 696-8008	brian.carlson@ci.vancouver.wa.us
City of Camas	616 NE 4th Ave Camas, WA 98607	Monte Brachman	Director of Public Works		mbrachman@ci.camas.wa.us
City of Kelso	2300 Parrot Way Kelso, WA 98626	Randy Johnson	Director of Public Works	(360) 423-5730 Fax: (360) 423-8196	rjohnson@kelso.gov
City of Longview	1525 Broadway Longview, WA 98632	Jeff Cameron	Director of Public Works	(360) 442-5200 Fax: (360) 442-5953	jeff.cameron@ci.longview.wa.us
City of Woodland	219 Davidson Ave. Woodland, WA 98674	Elaine Huber	Director of Public Works	(360) 225-799 Fax: (360) 225-7467	hubere@ci.woodland.wa.us
City of Battle Ground	109 SW 1st St., Suite 122 Battle Ground, WA 98604	Rob Charles	Director of Public Works	(360) 342-5070 Fax: (360) 342-5059	rob.charles@ci.battle-ground.wa.us
City of Ridgefield		Steven Wall	City Engineer	(360) 887-8251 Fax: (360) 887-2507	steve.wall@ci.ridgefield.wa.us
City of Washougal	1701 C. Steet Washougal, WA 98671	Scott P. Sawyer	Director of Public Works	(360) 835-8501 Fax: (360) 835-8808	cityclerks@washougal.wa.us
City of Castle Rock	360 A St. SW Castle Rock, WA 98611	David Vorse	Director of Public Works	(360) 274-7478 Fax: (360) 274-4876	crpwd@ci.castle-rock.wa.us
Mt. St. Helens National Volcanic Monument	42218 N.E. Yale Bridge Rd. Amboy, WA 98601			(360) 449-7800 Fax: (360) 449-7801	
Ridgefield National Wildlife Refuge	28908 NW Main Ave. Ridgefield, WA 98642	Jennifer Brown	Refuge Manager	(360) 887-3883 x2	jennifer_brown@fws.gov
City Kalama	6315 Old Pacific Hwy. South Kalama, WA 98625	Carl McCrary	Director of Public Works	(360) 673-3706	cmccrary@kalama.com